



FR Bearing Spacer Issue Review

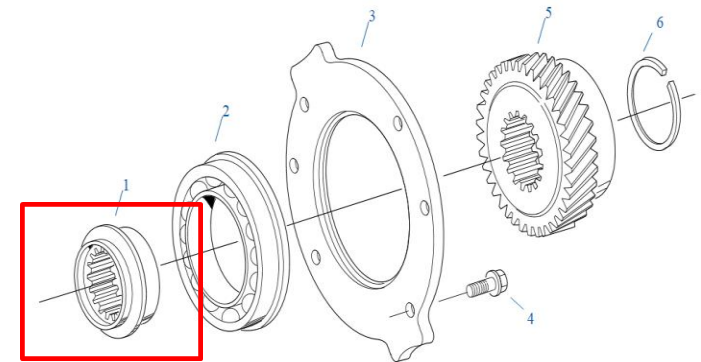
September 16, 2015



Background and Summary

- Eaton received four field complaints in vehicles with FR 10 speed manual transmissions
- No injuries or accidents occurred to date
- The Eaton Safety Committee concluded there is a safety concern with certain FR transmissions
 - Eaton will notify NHTSA late in the week of September 14th
 - Eaton determined that an incorrect auxiliary drive bearing spacer installed during assembly on a limited number of transmissions

PLACEHOLDER –
CROSSSECTION VIEW



Background and Summary Continued

- FR and FA models of manual transmissions built on same assembly line
- Main shaft key design differences between two models requires feature differences on bearing spacer for each model
- FA bearing spacer assemblies mixed with FR stock and were used for FR builds
- There are a total of 5 known defective units at present, all were built during 1st shift on 12/19/14



FR assembly w/ clearance for
main shaft key

FA assembly w/o clearance for
main shaft key

Issue Summary

- Incorrect aux bearing spacer installed causes main shaft key to be forced out of position allowing the reverse gear to move axially on the main shaft
- When the transmission shift lever is moved from reverse to neutral or low gear position the axial movement of the reverse gear can result in continued engagement of the gear and sliding clutch and torque being transmitted when main clutch is engaged (clutch pedal released)
- Potential failure modes
 - Transmission mechanically locked (reverse and low gear simultaneously engaged with shift lever in Low position)
 - Unintended vehicle movement (reverse gear engaged with shift lever in neutral position)
 - Both will result in a truck down situation if failure occurs
 - Failure modes related to shift lever movement out of reverse, not idling or driving conditions
- Field issues to date have all been low mileage (less than 5,000 miles)

Affected Population

- FR manual 10 speed transmissions
- Target Build Dates for inspection are from 12/18/14 – 12/21/14 (Total of 75 transmission)

PLACEHOLDER – BUILD SCHEDULE
INFORMATION

OEM Shipment Information

- Serial numbers of impacted transmissions:

PLACEHOLDER – SERIAL
NUMBERS/VIN's/SHIPPING INFO

Field Remedy

- Eaton process
 - Transmissions will be inspected to determine which spacer was installed
 - If determined to have incorrect spacer the transmission will be repaired or replaced at Eaton's expense

Requested Support

- Help identifying VINs, vehicle location and contacts as soon as possible



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